

DaimlerChrysler AG

Patent Claims

- 5 1. A method for updating a digital map, comprising
elements of a traffic route network, in a user end
device on which at least one user application of the
digital map runs, using a second digital map arranged
in a control center,
- 10 characterized in that an element subset - to be updated
- of the digital map can be selected at the user end
device and updating of this element subset can be
requested from the control center via an at least
temporary data link, wherein, after such a request has
- 15 been received, the control center automatically
selects, in addition to the element subset to be
updated, an additional element subset in the second
digital map in such a way that the digital map is
internally consistent after the updating, and wherein
- 20 data for updating the element subset to be updated and
data relating to the additional element subset is
transmitted from the control center to the user end
device via the at least temporary data link and
supplied to the digital map.
- 25
2. The method for updating a digital map, comprising
elements of a road traffic network, in a user end
device on which at least a user application of the
digital map runs, using a second digital map arranged
- 30 in a control center,
characterized in that an element subset - to be updated
- of the digital map can be selected at the user end
device and updating of this element subset can be
requested by the control center via an at least
- 35 temporary data link, wherein, in a first step, after
the reception of such a request, the control center
transmits data for updating the element subset to be
updated to the user end device via the at least

temporary data link and supplies it to the digital map, after which, in a second step, the user end device checks whether additional element subsets of the digital map are affected by the updating and as a function of the result of the check the control center automatically requests updating of these additional element subsets in such a way that after the data of the additional subsets has been received and supplied the digital map is internally consistent.

10

3. The method as claimed in claim 1 or 2, characterized in that the element subset to be updated comprises a geographic area and/or at least a route as a series of edges and/or at least a class of routes and/or one or more points of interest (POI) and/or classes of POIs.

4. The method as claimed in claim 3, characterized in that the consistency with respect to the user application which is running or with respect to any user application which is running on the user end device is ensured by automatically selecting the additional element subset in such a way that after the data for updating the additional element subset has been supplied there is no route in the digital map of the user end device at whose end it is inevitably necessary for traffic route network users to turn around if this route is not also included in the second digital map and/or there are no two routes at whose ends traffic route network users must inevitably turn around if these two routes are connected in the second digital map by a small number of edges, and/or there are no routes on which allocated turning around restrictions apply which are included in the second digital map as a result of routes, and/or route data which is relevant to reaching a POI is as up to date as the data of the POI itself, and/or element dependencies are transmitted completely.

5. The method as claimed in one of claims 1 to 4, characterized in that the at least temporary data link between a user end device and control center is embodied as a mobile radio link.

6. The method as claimed in one of claims 1 to 5, characterized in that the user end device automatically requests that the control center perform updating when a user application of the digital map is started and/or periodically.

7. The method as claimed in one of claims 1 to 6, characterized in that corrections of element inaccuracies in the second digital map are characterized specifically, wherein, together with the additional element subset, further data items which can be used to restore a logic link between elements in which inaccuracies are corrected by updating and non-corrected elements are transmitted from the control center to the user end device via the at least temporary data link.

8. The method as claimed in one of claims 1 to 7, characterized in that the data for updating the element subset to be updated also includes such elements of the second digital map which are contained only partially in the element subset to be updated.

9. The method as claimed in one of claims 3 to 8, characterized in that information about partitions, which constitutes a decomposition of the digital map on a geographic basis in the user end device can be stored at the control center end and a geographic area which is to be updated can be identified by means of a corresponding partition reference.

10. The method as claimed in one of claims 1 to 9,

characterized in that the user end device is registered at the control center end and identifies itself to the control center when there is a request to the control center.

5

11. The method as claimed in one of claims 1 to 10, characterized in that when there is a request to the control center the user end device transmits version information for an element subset to be updated to the digital map.

10

12. The method as claimed in one of claims 1 to 11, characterized in that an upper limiting value is provided for the size of the additional element subset or of each additional element subset.

15

13. The method as claimed in one of claims 1 to 12, characterized in that logically associated updates of the elements are transmitted in combination.

20

14. The method as claimed in one of claims 1 to 13, characterized in that if the digital map in the user end device only has a part of the second digital map arranged in the control center, inconsistency of the digital map is permissible at points at which there is a boundary between a part which is included in the digital map and a part which is not included in the user end device.

25

15. A device for carrying out the method as claimed in one of claims 1 to 14, having a user end device comprising memory means for a digital map and a control center comprising control center memory means for a second digital map, wherein the user end device and control center each have an arithmetic means and a communication means for setting up an at least temporary data link.

30
35